DESIGNATION OF A LECTOTYPE AND DESCRIPTIONS OF FOUR NEW SPECIES OF AUSTRALIAN BUPRESTIDAE (COLEOPTERA).

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A lectotype is designated for *Cisseis nubeculosa* Germar. The following four new species of Buprestidae are described: *Cisseis ernestadamsi* sp. nov., *Cisseis robertfisheri* sp. nov., *Astraeus acaciae* sp. nov., *Neocuris carnabyae* sp. nov.

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Material

Specimens examined came from the following institutions and collections:

ANIC — Australian National Insect Collection, CSIRO, Canberra.

BMNH — The Natural History Museum, London.

HUMB — Humboldt University Museum, Berlin.

MHSA — Mr T. M. S. Hanlon, Hunters Hill, Sydney.

MPWA — Mr M. Powell, Melville, Western Australia.

SAMA — South Australian Museum, Adelaide.

Introduction

Cisseis and *Ethon,* closely related genera in the tribe Agrilini (Coleoptera: Buprestidae), were proposed by Gory and Laporte (1839). Subsequently Blackburn (1887) separated *Neospades* from *Cisseis* on the basis of the structure of the tarsi and their claws described as double in *Neospades* and single in *Cisseis (s.s.).* Examination of available material has shown that there is a gradation in the tarsal claws from one condition to the other and *Neospades* should be delimited by other characters or abandoned. Carter (1923) was the last reviser of *Cisseis* which now needs to be re-examined. *Cisseis* species are difficult to identify and all of the types need to be examined before a revision can be completed. It is now known that the genus occurs in Australia, New Guinea and nearby islands and in the Philippine Islands. In Australia the genus is largely, but not exclusively, associated with *Acacia* species.

The location of the Germar types of *Cisseis* in the Humboldt University Museum, Berlin has been established and I have examined the types of *Cisseis nubeculosa* Germar, *Cisseis chalcoptera* Germar and *Cisseis notulata* Germar, all collected in Adelaide. The first two are female and male specimens respectively of the same species, common in South Australia. The third is an uncommon species confined to South Australia as far as I know. Two new species of *Cisseis* were discovered by veteran collectors: the first in Queensland by Mr E. E. Adams, beetle collector extraordinaire; the second in South Australia by Mr R. H. Fisher, well known butterfly expert. Herein I name both species to honour their collectors.

Astraeus is a well known genus in which more than half the species are associated with *Allocasuarina* species (Barker 1975; 1977; 1989). Thus it is unusual that a new species has been found in Western Australia associated with *Acacia,* the first record of an association between the two genera. On the other hand *Neocuris* is poorly known and difficult to identify. The group has not been revised for over seventy years (Carter 1928) and there is no reliable key for their identification. A very distinctive species has come to hand from a remote locality in Western Australia and is described herein.

Designation Of Lectotype

I have examined two female syntypes of *Cisseis nubeculosa* Germar (HUMB no. 42752) and two male syntypes of *Cisseis chalcoptera* Germar

(HUMB no. 42752) all collected in South Australia (Germar 1848) and held in the Humboldt University Museum, Berlin. These specimens all belong to the same common species which is confined to South Australia. Thus *C. chalcoptera* Germar is a synonym of *C. nubeculosa* Germar. I have placed a fluorescent red label with the following handwritten words: LECTOTYPE, *Cisseis nubeculosa* (Germar), selected S. BARKER 1998, on the pin of one of the two female syntypes. I hereby designate this specimen as the lectotype of *C. nubeculosa* Germar.

Descriptions Of New Species

Cisseis ernestadamsi sp. nov.
(Fig. 1A)

Types

Holotype: ♂, ii.1946, Edungalba, Qld, on brigalow, E. E. Adams, ANIC. *Allotype:* ♀, summer 1975/76, Separation, Qld, leg. A. Smith, E. E. Adams, SAMA I21 406. *Paratypes:* Qld. 3 ♀♀, xii.1945, Mourangee, Edungalba, E. E. Adams, ANIC; 1 ♀, same data as holotype, ANIC; 1 ♀, 1969, Edungalba, 80 km SW (sic) of Rockhampton, E. E. Adams, ANIC; 1.xii.1973, Mr Emlen, Milmerran, J. McQueen, ANIC.

Colour

Head and antennae coppery. Pronotum coppery with green reflections. Scutellum green or coppery with green reflections. Elytra dull green with coppery reflections; irregularly spotted with clumps of white pubescent setae. Ventral surface dull green, much of the sternum covered with dense white pubescent setae, abdomen with thick white pubescent setae laterally. Legs dull green.

Shape and sculpture

Head flat, deeply punctured, moderately setose; interocular width 0.6 of maximum head

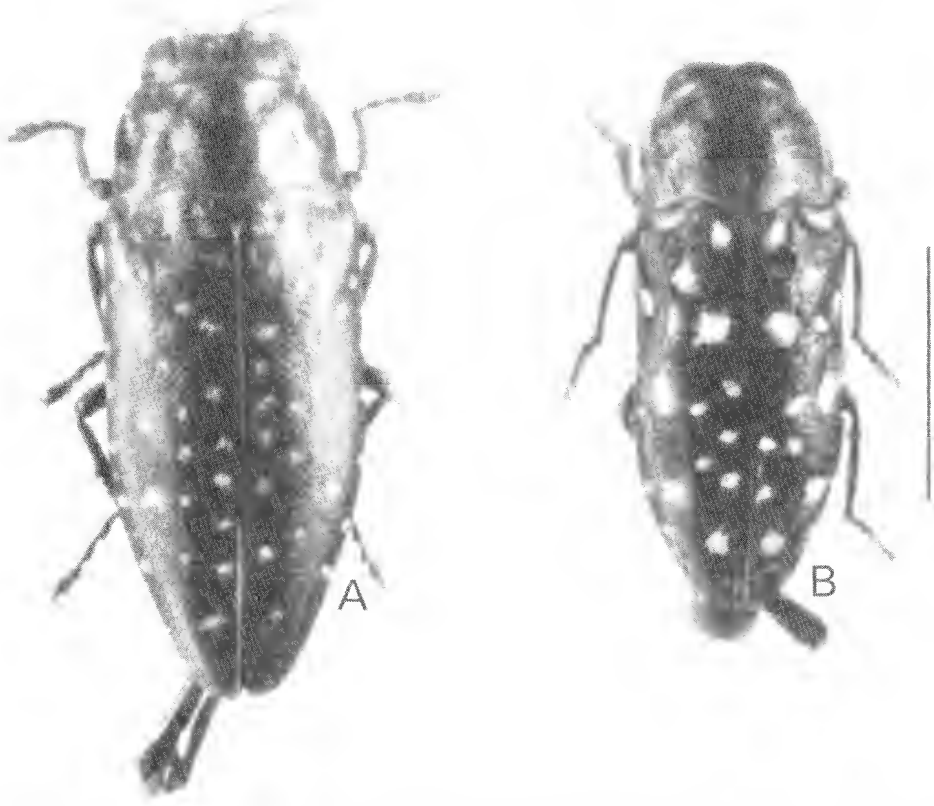

FIGURE 1. Habitus illustrations of the following *Cisseis* species. **A**, *C. ernestadamsi* sp. nov. **B**, *C. robertfisheri* sp. nov. Scale bar = 5mm.

width, dense pubescence around ventral margins of eye and lateral to the mouth. Antennomeres: 1–3 obconic; 4–11 triangular. Pronotum shallowly punctured medially, striolate and with irregular foveae laterally; anterior margin straight, basal margin sinuate; dorsal carina diverging from ventral carina at base for short distance, then more or less parallel until again diverging towards anterior margin which it reaches, space between deeply punctured and with some pubescence in well preserved specimens. Scutellum scutiform, anterior margin rounded, flat with punctures. Elytra heavily scutellate with small, stiff clumps of setae scattered more or less evenly over the whole surface. Ventral surface shallowly punctured, setae sparse medially, clumped and pubescent laterally. Legs: tarsal claws with inner tooth; hind tibial comb from middle to apex with three rounded projections.

Size

Male, 13.0 x 4.5 mm (1). Females, 14.7 x 5.0 mm (7).

Remarks

This species is closest to *C. niveosparsa* Carter and has been misidentified as that species. It can be distinguished by its green colour, *C. niveosparsa* is brown; it is a larger species; male genitalia are reasonably similar but not identical. It was collected on *Acacia harpophylla* F. Muell, ex Benth., brigalow, at all localities.

Etymology

This species is named after its collector Mr E. E. Adams, Edungalba, Queensland.

Cisseis robertfisheri sp. nov.
(Fig. 1B)

Types

Holotype: ♂, Melrose, S. Aust., 1.iii.1986, R. H. Fisher, SAMA I21 407. *Allotype:* ♀, Melrose, S. Aust., 23.i.1978, R. H. Fisher, SAMA I21 408. *Paratype:* S. Aust.: ♂, same data as holotype, SAMA.

Colour

Head, antennae, pronotum, scutellum dark green. Elytra black with spots formed from clumps of white pubescent setae. Ventral surface dark green with lateral white spots formed by pubescent setae. Legs dark green.

Shape and sculpture

Head deeply punctured, deep anterior median fovea, interocular width 0.6 maximum head width. Antennomeres: 1–3 obconic; 4–11 triangular. Pronotum shallowly punctured medially, deeply punctured laterally; anterior margin projecting slightly medially, basal margin sinuate; dorsal carina not meeting ventral carina posteriorly, diverging for short distance then more or less parallel, not reaching anterior margin, space between punctured and covered with squamiform setae. Scutellum scutiform, the sides extended laterally, flat, without punctures. Elytra with numerous white spots formed by clumps of pubescent setae, the eight largest arranged in a circular pattern, with a number of smaller inner and outer spots including one on each side at the basal margin. Ventral surface shallowly punctured medially, scutiform laterally; with dense lateral clumps of pubescent setae. Legs: tarsal claws with small inner tooth; hind tibia with setal comb from just before middle to apex in three distinct clumps.

Size

Males, 12.0 x 4.1 mm (2). Female, 13.5 x 5.0 mm (1).

Remarks

All specimens were collected on *Acacia victoriae* Benth. The species most resembles *C. leucosticta* Kirby (holotype BMNH) but can be separated from that species by the dark green colour of the head and pronotum which are bronze-green or coppery in *C. leucosticta;* the elytra which are black in *C. robertfisheri* and brown or bronze in *C. leucosticta;* and the male genitalia which are narrower and parallel-sided in *C. robertfisheri* and wider and rounded in *C. leucosticta.*

Etymology

This species is named after its collector Mr R. H. Fisher, Adelaide.

Astraeus acaciae sp. nov.
(Fig. 2)

Types

Holotype: ♂, Wooramel R., W.A., on *Acacia* sp., 23.ix.1980, S. Barker & D. J. Williams, SAMA I21 409. *Allotype:* ♀, 11 km S Billabong roadhouse, W.A. on *Acacia sclerosperma,* 7.ix.1996, M. Golding & M. Powell, WAMA.

FIGURE 2. Habitus illustration of *Astraeus acaciae* sp. nov. Scale bar = 5mm.

Paratypes: 1 ♂, same data as allotype, MPWA; 3 ♂♂ & 1 ♀, 11 km S Billabong roadhouse, W.A., 9.ix.1996, M. Golding & M. Powell, MPWA; 3 ♀♀, 1 ♂ 11 km S Billabong roadhouse, W.A., 11.ix.1998, T. M. S.Hanlon MHSA; ♂, 11 km S Billabong roadhouse, 11.ix.1998, M. Golding & M. Powell, MPWA.

Colour

Head black with purple reflections. Antennae black with blue-green reflections. Pronotum black with purple reflections. Elytra black with blue and purple reflections and the following pale yellow markings: elongate basal spot almost reaching basal margin; pre-medial fascia, concave forwards touching margin but not reaching suture; post-medial fascia, concave backwards touching margin reaching little more than half way to suture; elongate pre-apical spot. In one of the specimens in the type series there is an elongate, narrow spot between the two fasciae close to but not touching the suture. Ventral surface black with blue and purple reflections. Legs black with blue-green reflections. Setae silver.

Shape and sculpture

Head closely punctured; with small apical median keel; setose. Antennae: males with antennomeres more or less equal in length; females with antennomeres progressively decreasing in length towards apex. Pronotum closely punctured; laterally rounded and narrowed from base to apex; small basal crypt at apex of medial lobe, setose. Elytra costate, intervals flat and smooth, each interval with row of punctures; parallel-sided from base, rounded posteromedially and tapered to sharp marginal spine; sutural spine sharp, rounded inner margin; humeral fold moderately developed, angled (*vide* Barker 1975 Fig. 1C). Ventral surface shallowly punctured, moderately setose, setae short.

Size

Males, 8.7 x 3.5 mm (7). Females, 9.1 x 4.1 mm (5).

Remarks

In my revised key to *Astraeus (s.s.)* (Barker 1989 p. 191) this species keys out at 18. Add: 'Short, compressed species.... *A. acaciae* Barker.'

Etymology

This species is named for its association with *Acacia sclerosperma* F. Muell.

Neocuris carnabyae sp. nov.
(Fig. 3)

Types

Holotype: ♂, Coral Bay, W.A., 9.ix.1974, K. & E. Carnaby, ANIC. *Allotype:* ♀, same data as holotype, ANIC. *Paratypes:* W.A.: 6 ♂♂, Coral Bay, 8.ix.1974, K. & E. Carnaby, ANIC; 5 ♂♂ & 2 ♀♀, same data as holotype, ANIC & SAMA; 1 ♂, 112 km S Onslow, 28.viii.1971, T. F. Houston, SAMA.

Colour

Male. Head and antennae green with yellow reflections. Pronotum blue-green medially, green laterally with yellow reflections. Scutellum green.

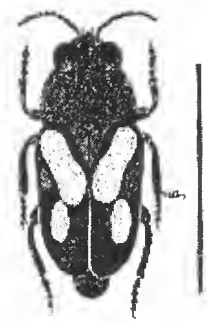

FIGURE 3. Habitus illustration of *Neocuris carnabyae* sp. nov. Scale bar = 5mm.

Elytra green surrounding scutellum and along suture for short interval; green at margin at the level of the interval between second and third coxae; elsewhere dark blue except for yellow marking in the form of a central X, the arms completely connected in some specimens and not in others. Ventral surface and legs green. Setae silver.

Female. Head and antennae blue. Pronotum and scutellum dark blue. Elytra same markings as in male but blue replaces green. Ventral surface blue, legs royal blue. Setae silver.

Shape and sculpture

Ovoid. Head shallowly but closely punctured with medial sulcus. Antennomeres: 1–2 obconic; 3–11 triangular. Pronotum shallowly but closely punctured; projecting medially from apical margin, basal margin bisinuate; laterally rounded and narrowed from base to apex, a few punctations each with central sensillum. Scutellum scutiform, without punctures. Elytra shallowly punctured, humeral callus prominent, apically rounded and subserrate. Ventral surface with shallow punctures.

Size

Males, 5.8 ± 0.08 x 2.5 ± 0.04 mm (12). Females, 6.5 ± 0.32 x 2.8 ± 0.15 mm (3).

Remarks

The elytral markings most closely resemble those of *Neocuris ornata* Carter, a Queensland species in which the pale markings take the form of a **W**. The head and pronotum of that species are bright metallic green.

Etymology

The name honours the collector Mrs Edith Carnaby of Wilga.

Acknowledgments

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References

BARKER, S. 1975. A revision of the genus *Astraeus* Laporte & Gory (Coleoptera: Buprestidae). *Transactions of the Royal Society of South Australia* **99**: 105–142.

BARKER, S. 1977. *Astraeus* (Coleoptera: Buprestidae); A description of three new species and new locality records. *Transactions of the Royal Society of South Australia* **101**: 11–14.

BARKER, S. 1989. Contributions to the taxonomy of Australian Buprestidae (Coleoptera): New species of *Astraeus* and *Stigmodera (Castiarina)* and a key to *Astraeus* (*s.s.*). *Transactions of the Royal Society of South Australia* **113**: 185–194.

BARKER, S. 1998. Selection of lectotypes and redescriptions of three *Cisseis* (Coleoptera: Buprestidae) species. *Records of the South Australian Museum* **31**: 21–23.

BLACKBURN, T. 1887. Further notes on Australian coleoptera with descriptions of new species. *Transactions of the Royal Society of South Australia* **10**: 177–287.

CARTER, H. J. 1923. Revision of the genera *Ethon, Cisseis* and their allies (Buprestidae). *Proceedings of the Linnean Society of New South Wales* **48**: 159–176.

CARTER, H. J. 1928. Revision of the Australian species of the genus *Curis, Neocuris* and *Trachys,* together with notes and descriptions of new species of other Coleoptera. *Proceedings of the Linnean Society of New South Wales* **53**: 270–290.

GERMAR, E. F. 1848. Beiträge zur Insektenfauna von Adelaide. *Linnaea entomologica* **3**: 153–247.

GORY, H. & LAPORTE, F. L. 1839. 'Histoire naturelle et iconographie des insectes coléoptères, publiée par monographies séparées.' Volume **2,** livraisons 25–35. P. Duménil: Paris.